sponding to the vertices or a distance between the vertices and the particles; and

placing the selected caustic textures on the caustic map to correspond to the vertices.

10. The method of claim 9, wherein the placing of the selected caustic textures on the caustic map comprises:

placing virtual particles on the caustic map based on a complexity of particles corresponding to the selected caustic textures;

generating, based on the virtual particles, caustic lines used to connect the selected caustic textures to each other; and

connecting the selected caustic textures to each other by the caustic lines.

11. The method of claim 10, wherein the generating of the caustic lines comprises generating the caustic lines at equal distances from particles corresponding to an outline of each of the selected caustic textures and neighboring virtual particles.

12. The method of claim 1, wherein the applying of the caustic textures to the intersection positions comprises controlling an application intensity of the caustic textures based on an angle between a surface normal vector of the first object and an incident direction of the rays.

13. The method of claim 12, wherein the controlling of the application intensity comprises:

increasing the application intensity in response to the surface normal vector being parallel to the incident direction; and

decreasing the application intensity in response to the surface normal vector being perpendicular to the incident direction.

14. The method of claim 1, wherein the applying of the caustic textures to the intersection positions comprises adjusting an application size of the caustic textures based on a distance between positions of surface particles of a surface of the first object and intersection positions corresponding to the surface particles.

15. The method of claim 14, wherein the adjusting of the application size comprises:

adjusting the application size so that the caustic textures appear larger in response to the distance being greater than a preset reference value; and

adjusting the application size so that the caustic textures appear smaller in response to the distance being less than the reference value.

16. The method of claim 1, wherein the rendering of the first object comprises combining the caustic map with at least one of a specular map and a diffuse map.

17. The method of claim 1, wherein the caustic textures are stored in advance in correspondence to the particles, or are generated by connecting and interpolating the stored caustic textures based on light and an external force exerted on the first object.

18. The method of claim 1, wherein the first object has transparent or semitransparent properties allowing the rays to be refracted and reflected by passing through the first object.

19. A non-transitory computer readable medium storing instructions for causing computing hardware to perform the method of claim 1.

20. A caustic rendering apparatus comprising:

a processor configured to calculate intersection positions at which rays emitted from a light source pass through particles of a first object and meet a second object, and to render the first object using a caustic map generated by applying caustic textures to the intersection positions; and

a memory configured to store the caustic textures.

21. The apparatus of claim 20, further comprising a receiver configured to receive at least one information among a position of the light source, a depth map pre-rendered from the position of the light source, positions of the particles, and a surface normal vector of the first object,

wherein the processor is configured to calculate the intersection positions for each of the particles based on the at least one received information.

22. The apparatus of claim 20, wherein the processor is configured to determine particles directly visible from the light source among the particles and to calculate intersection positions for the particles directly visible from the light source.

23. The apparatus of claim 20, wherein the processor is configured to mark vertices corresponding to the intersection positions and to apply the caustic textures to the vertices.

24. The apparatus of claim 23, wherein the processor is configured to select the caustic textures based on at least one of a fluid surface curvature of each of the particles corresponding to the vertices and a distance between the vertices and the particles, and to place the selected caustic textures on the caustic map to correspond to the vertices.

25. The apparatus of claim 24, wherein the processor is configured to place virtual particles on the caustic map based on a complexity of particles corresponding to the selected caustic textures, to generate, based on the virtual particles, caustic lines used to connect the selected caustic textures to each other, and to connect the selected caustic textures to each other by the caustic lines.

26. The apparatus of claim 20, wherein the processor is configured to control an application intensity of the caustic textures based on an angle between a surface normal vector of the first object and an incident direction of the rays, and to adjust an application size of the caustic textures based on a distance between positions of surface particles of a surface of the first object and intersection positions corresponding to the surface particles.

27. The apparatus of claim 20, wherein the caustic textures are stored in advance in correspondence to the particles, or are generated by connecting and interpolating the stored caustic textures based on light and an external force exerted on the first object.

28. The method of claim 1, further comprising, actuating a monitor to display the rendered first object to a user.

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